AD-A058 159 ARMY ELECTRONICS COMMAND WHITE SANDS MISSILE RANGE N--ETC F/G 4/2
19302A GSRS. MISSILE NUMBERS V-7/V-8, ROUND NUMBERS V-7/V-8.(U)
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LEVEL II

METEOROLOGICAL DATA REPORT

19302A GSRS
MISSILE NOS. V-7/V-8, ROUND NOS. V-7/V-8
(14 APRIL 1978)

BY

WSMR METEOROLOGICAL TEAM

ATMOSPHERIC SCIENCES LABORATORY
WHITE SANDS MISSILE RANGE, NEW MEXICO

ECOM
UNITED STATES ARMY ELECTRONICS COMMAND

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(9) Meteorological data Rpt.

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REPORT DOCUMENTATION PAGE

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3. RECIPIENT'S CATALOG NUMBER	
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19. KEY WORDS (Continue on reverse side if necessary and identify by block number)

1. Ballistics
2. Meteorology
3. Wind

20. ABSTRACT (Continue on reverse side if necessary and identify by block number)

Meteorological data gathered for the launching of 19302A GSRS, Missile Numbers V-7/V-8, Round Numbers V-7/V-8, are presented in tabular form.

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CONTENTS

INTRODUCTION

19302A GSRS, Missile Numbers V-7/V-8, Round Numbers V-7/V-8, were launched from LC-33, White Sands Missile Range (WSMR), New Mexico, at 0821/0845 HRS MST, 14 April 1978. The scheduled launch times were 0815/0835 HRS MST.

DISCUSSION

Meteorological data were recorded and reduced by the White Sands Meteorological Team, Atmospheric Sciences Laboratory (ASL), White Sands Missile Range, New Mexico. The data were obtained by the following methods:

1. Observations

   a. Surface

      (1) Standard surface observations to include pressure, temperature (°C), relative humidity, dew point (°C), density (gm/m^3), wind direction, wind velocity and cloud cover were made at the LC-33 Met Site at T-0 mins.

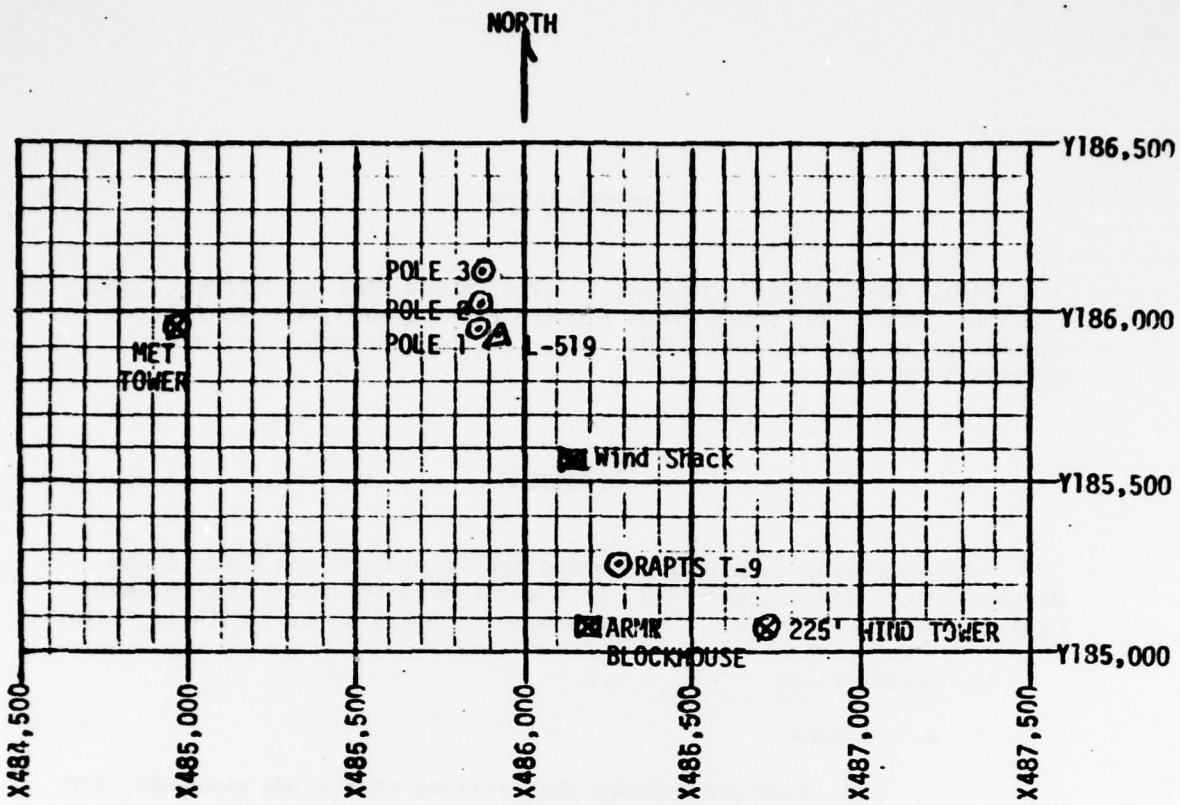
      (2) Anemometer data were provided from existing pole mounted and tower mounted anemometers at LC-33. Monitor of wind speed and direction from one anemometer was also provided in the launch control room.

   b. Upper Air

      (1) Low level wind data were obtained from RAPTS-T-9 pibals observations at T-0 mins as follows:

SITE & ALT.
LC-33 900 meters (15 meter incs)
APA 900 meters (30 meter incs)
SMR 900 meters (30 meter incs)

      (2) Air structure data (rawinsonde) were collected at the SMR Met Site at T-0 mins. Data were collected from surface to 125% of apogee in 100 meter incs.



1. MET TOWER - 4 Bendix Model T-120 Anemometers at 12 ft, 62 ft, 102 ft and 202 ft with E/A recorders in Wind Shack.

2. POLE ANEMOMETER - Bendix Model T-120 with E/A recorders in Wind Shack

   (a) Pole #1 - 38.7 ft

   (b) Pole #2 - 53.0 ft

   (c) Pole #3 - 83.6 ft

3. 225 FT WIND TOWER - 5 Bendix Model T-120 Anemometers at 35 ft, 88 ft, 128 ft, 168 ft and 200 ft with 5 X-Y visual indicators in Blockhouse.

4. RAPTS T-9 - Radar Automatic Pilot-Balloon Tracking System T-9 Radar

The data are presented in the following tabulations:

ELEVATION	3,986.67	FEET/MSL
PRESSURE	879.9	MBS
TEMPERATURE	20.8	°C
RELATIVE HUMIDITY	22	%
DEW POINT	-1.5	°C
DENSITY	1,038.8	GM/M^3
WIND SPEED	03	MPH
WIND DIRECTION	125	DEGREES
CLOUD COVER	.3	Cu

TABLE I. SURFACE OBSERVATIONS TAKEN AT LC-33,
AT 0821 HRS MST/14 APRIL 1978
19302A GSRS, MISSILE NO. V-7, ROUND NO. V-7

The data are presented in the following tabulations:

ELEVATION	3,986.67	FEET/MSL
PRESSURE	879.2	MBS
TEMPERATURE	22.0	°C
RELATIVE HUMIDITY	22	%
DEW POINT	-0.7	°C
DENSITY	1,033.8	GM/M^3
WIND SPEED	06	MPH
WIND DIRECTION	340	DEGREES
CLOUD COVER	.3	Cu

TABLE II. SURFACE OBSERVATIONS TAKEN AT LC-33,
AT 0845 HRS MST/14 APRIL 1978
19302A GSRS, MISSILE NO. V-8, ROUND NO. V-8

HEIGHT (FEET)	DIRECTION (DEGREES)	SPEED (MPH)
SUR	125	3.0
100	121	2.5
200	117	2.0
300	124	2.5
400	130	2.5
500	114	3.5
600	097	4.0
700	081	4.5
800	065	5.0
900	067	3.5
1000	068	1.5
1100	139	3.0
1200	210	4.0
1300	245	5.0
1400	279	5.5
1500	282	6.0

HEIGHT (FEET)	DIRECTION (DEGREES)	SPEED (MPH)
1600	285	6.0
1700	281	6.0
1800	277	6.0
1900	299	5.5
2000	320	4.5
2100	295	7.5
2200	270	10.0
2300	264	10.5
2400	257	11.0
2500	264	12.5
2600	271	13.5
2700	269	14.0
2800	267	14.0
2900	266	14.5
3000	264	14.5

TABLE III. RAPTS-T-9 PILOT-BALLOON-MEASURED WIND DATA, RELEASED FROM LC-33 AT 0821 HRS MST/14 APRIL 1978 19302A GSRS, MISSILE NO. V-7, ROUND NO. V-7

PIBAL RELEASE POINT WSTM COORDINATES:

X = 486,037.24 Y = 182,350.16 Z = 3,977.30

APPROXIMATELY: 1/2 MILE SOUTH OF LAUNCHER.

NOTE: WIND DIRECTION DATA ARE REFERENCED TRUE NORTH.

HEIGHT (FEET)	DIRECTION (DEGREES)	SPEED (MPH)
SUR	275	15.0
100	238	17.5
200	201	19.5
300	240	16.5
400	279	13.0
500	268	12.5
600	256	11.5
700	257	11.0
800	258	10.5
900	251	11.5
1000	243	12.5
1100	255	12.0
1200	267	11.5
1300	263	13.0
1400	259	14.0
1500	263	15.0
1600	267	16.0
1700	263	15.5
1800	259	14.5
1900	257	14.0
2000	255	13.0

HEIGHT (FEET)	DIRECTION (DEGREES)	SPEED (MPH)
2100	256	14.5
2200	256	16.0
2300	260	17.0
2400	263	18.0
2500	268	18.0
2600	272	17.5
2700	278	18.0
2800	284	18.5
2900	282	19.0
3000	279	19.5
3100	278	19.0
3200	276	18.0
3300	278	19.0
3400	280	19.5
3500	275	20.0
3600	270	20.5
3700	272	21.0
3800	273	21.0
3900	272	21.5
4000	271	22.0
4100	272	23.0

TABLE IV. RAPTS-T-9 PILOT-BALLOON-MEASURED WIND DATA, RELEASED FROM SMR AT 0825 HRS MST/14 APRIL 1978 19302A GSRS, MISSILE NO. V-7, ROUND NO. V-7

PIBAL RELEASE POINT WSTM COORDINATES:

X = 472,441.28 Y = 214,137.54 Z = 3,999.00

APPROXIMATELY: 7 MILES NNW OF LAUNCHER.

NOTE: WIND DIRECTION DATA ARE REFERENCED TRUE NORTH.

HEIGHT (FEET)	DIRECTION (DEGREES)	SPEED (MPH)
4200	272	24.0
4300	269	24.5
4400	266	24.5
4500	268	25.0
4600	270	25.0
4700	268	24.5
4800	266	24.5
4900	266	21.5
5000	265	19.0
5100	265	18.0
5200	264	16.5
5300	268	17.5
5400	271	18.0
5500	270	17.5
5600	268	17.0

HEIGHT (FEET)	DIRECTION (DEGREES)	SPEED (MPH)
5700	266	17.5
5800	264	17.5
5900	266	17.5
6000	267	17.0
6100	264	16.5
6200	261	15.5
6300	261	16.0
6400	260	16.0
6500	264	17.0
6600	268	17.5
6700	264	17.0
6800	259	16.0
6900	261	15.5
7000	263	14.5

TABLE IV. (CONT)

NOTE: WIND DIRECTION DATA ARE REFERENCED TRUE NORTH.

HEIGHT (FEET)	DIRECTION (DEGREES)	SPEED (MPH)
SUR	250	15.0
100	254	16.0
200	258	17.0
300	266	17.5
400	273	18.0
500	262	18.5
600	250	19.0
700	249	19.0
800	248	18.5
900	256	16.5
1000	263	14.5
1100	267	15.5
1200	270	16.5
1300	273	17.5
1400	275	18.5
1500	275	18.5
1600	274	18.5
1700	273	18.5
1800	271	18.5
1900	272	18.0
2000	272	17.5

HEIGHT (FEET)	DIRECTION (DEGREES)	SPEED (MPH)
2100	275	16.0
2200	277	14.5
2300	275	14.5
2400	272	14.0
2500	267	14.5
2600	262	15.0
2700	266	14.5
2800	269	13.5
2900	270	14.5
3000	271	15.0
3100	268	15.5
3200	265	16.0
3300	266	16.5
3400	266	17.0
3500	268	17.5
3600	270	17.5
3700	270	18.5
3800	269	19.5
3900	270	20.0
4000	270	20.0
4100	269	20.5

TABLE V. RAPTS-T-9 PILOT-BALLOON-MEASURED WIND DATA,
RELEASED FROM SMR AT 0845 HRS MST/14 APRIL 1978
19302A GSRS, MISSILE NO. V-8, ROUND NO. V-8

PIBAL RELEASE POINT WSTM COORDINATES:

X = 472,441.28 Y = 214,137.54 Z = 3,999.00

APPROXIMATELY: 7 MILES NNW OF LAUNCHER.

NOTE: WIND DIRECTION DATA ARE REFERENCED TRUE NORTH.

HEIGHT (FEET)	DIRECTION (DEGREES)	SPEED (MPH)
4200	268	21.0
4300	268	22.0
4400	267	23.0
4500	266	23.5
4600	265	24.0
4700	261	25.5
4800	257	27.0
4900	259	27.0
5000	260	27.0
5100	262	26.5
5200	263	25.5
5300	263	25.5
5400	263	25.0
5500	264	23.5
5600	265	21.5

HEIGHT (FEET)	DIRECTION (DEGREES)	SPEED (MPH)
5700	264	21.0
5800	263	20.5
5900	260	21.0
6000	257	21.5
6100	259	19.5
6200	260	17.5
6300	260	18.0
6400	260	18.0
6500	256	18.5
6600	251	19.0
6700	253	16.5
6800	255	14.0
6900	253	16.5
7000	251	19.0

TABLE V. (CONT)

NOTE: WIND DIRECTION DATA ARE REFERENCED TRUE NORTH.

HEIGHT (FEET)	DIRECTION (DEGREES)	SPEED (MPH)
SUR	340	6.0
100	337	7.5
200	334	9.0
300	334	11.0
400	333	13.0
500	342	9.0
600	351	5.0
700	330	3.5
800	308	1.5
900	321	2.5
1000	334	3.0
1100	308	4.5
1200	281	6.0
1300	251	5.5
1400	220	4.5
1500	259	5.5

HEIGHT (FEET)	DIRECTION (DEGREES)	SPEED (MPH)
1600	297	6.0
1700	296	7.0
1800	294	8.0
1900	283	8.5
2000	272	8.5
2100	271	9.0
2200	270	9.0
2300	277	12.0
2400	283	14.5
2500	283	13.5
2600	283	12.0
2700	281	13.5
2800	279	15.0
2900	282	16.5
3000	284	17.5

TABLE VI. RAPTS-T-9 PILOT-BALLOON-MEASURED WIND DATA, RELEASED FROM LC-33 AT 0846 HRS MST/14 APRIL 1978 19302A GSRS, MISSILE NO. V-8, ROUND NO. V08

PIBAL RELEASE POINT WSTM COORDINATES:

X = 486,037.24 Y = 182,350.16 Z = 3,977.30

APPROXIMATELY: 1/2 MILE SOUTH OF LAUNCHER.

NOTE: WIND DIRECTION DATA ARE REFERENCED TRUE NORTH.

HEIGHT (FEET)	DIRECTION (DEGREES)	SPEED (MPH)
SUR	200	3.0
100	206	3.4
200	211	3.7
300	215	4.1
400	218	4.6
500	221	5.0
600	223	5.4
700	225	5.9
800	227	6.3
900	228	6.8
1000	229	7.2
1100	230	7.7
1200	232	8.2
1300	233	8.7
1400	234	9.2
1500	235	9.7

HEIGHT (FEET)	DIRECTION (DEGREES)	SPEED (MPH)
1600	236	10.2
1700	237	10.7
1800	238	11.2
1900	239	11.7
2000	239	12.2
2100	240	12.7
2200	240	13.2
2300	240	13.6
2400	239	14.0
2500	239	14.4
2600	238	14.8
2700	238	15.2
2800	237	15.6
2900	237	16.0
3000	236	16.4

TABLE VII. RAPTS-T-9 PILOT-BALLOON-MEASURED WIND DATA, RELEASED FROM APACHE AT 0908 HRS MST/14 APRIL 1978 19302A GSRS, MISSILE NOS. V-7/V-8, ROUND NOS. V-7/V-8

PIBAL RELEASE POINT WSTM COORDINATES:

X = 481,338.6 Y = 267,644.4 Z = 3,962.07

APPROXIMATELY: 16 MILES NORTH OF LAUNCHER.

NOTE: WIND DIRECTION DATA ARE REFERENCED TRUE NORTH.

STATION ALTITUDE 3989.00 FEET MSL
14 APR. 78 0730 HRS MST
ASCENSION NO. 236

SIGNIFICANT LEVEL DATA
10400202
WHITE SANDS
TABLE VIII.

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

PRESSURE MILLIBARS	GEOMETRIC ALTITUDE MSL FEET	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT DEGREES CENTIGRADE	REL. HUM. PERCENT
879.0	3989.0	16.5	-4.7	23.0
864.8	4445.9	19.4	-4.1	20.0
850.0	4931.3	17.9	-4.7	21.0
700.0	10266.7	6.1	-12.4	25.0
667.6	11534.8	3.0	-17.7	20.0
604.8	14130.5	-4.0	-13.9	40.0
561.4	16044.4	-9.1	-15.0	62.0
545.4	16778.0	-10.9	-17.5	50.0
535.8	17226.4	-11.5	-24.2	34.0
519.6	18001.1	-11.0	-30.0	19.0
500.0	18968.6	-13.0	-31.7	19.0
443.6	21938.9	-18.2	-36.6	18.0
400.0	24444.7	-25.5	-42.7	18.0
354.8	27259.2	-33.8	-48.9	20.0
300.0	31043.7	-44.6		
271.0	33259.6	-49.7		
250.0	34994.2	-50.7		
234.0	36408.9	-52.2		
204.6	39240.4	-57.0		
200.0	39714.8	-57.0		
187.0	41122.1	-55.4		
181.8	41713.9	-56.1		
173.6	42681.7	-55.8		
165.8	43642.8	-57.4		
160.8	44281.3	-57.0		
157.0	44783.3	-54.5		
153.4	45273.5	-54.1		
150.0	45746.4	-55.2		
128.6	48939.9	-61.5		
124.4	49618.1	-61.9		

STATION ALTITUDE 3989.00 FEET MSL
14 APR. 78 0730 HRS MST
ASCENSION NO. 236

SIGNIFICANT LEVEL DATA
10400 20236
WHITE SANDS
TABLE VIII. (CONT)

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

PRESSURE MILLIBARS	GEOMETRIC ALTITUDE MSL FEET	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT DEGREES CENTIGRADE	REL.HUM. PERCENT
116.2	50663.7	-61.0		
111.8	51797.8	-63.6		
100.0	54040.4	-66.6		
86.6	56874.5	-72.1		
70.0	61089.6	-64.5		
56.6	65356.6	-66.6		
50.0	67847.2	-64.5		
48.2	68592.6	-61.7		
30.0	78468.1	-54.4		
20.0	87162.3	-49.9		
14.8	93744.6	-44.9		
12.0	98453.7	-38.6		
10.0	102620.1	-36.9		
9.0	105041.3	-36.1		

STATION ALTITUDE 3989.00 FEET MSL
14 APR. 78 0730 HRS MST
ASCENSION NO. 236

UPPER AIR DATA
1040020236
WHITE SANDS
TABLE IX.

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
3989.0	879.0	16.5	-4.7	23.0	1056.2	663.6	120.0	3.9	1.000255
4000.0	878.7	16.6	-4.7	22.9	1054.6	663.7	120.6	3.8	1.000254
4500.0	863.1	19.2	-4.2	20.1	1026.4	666.8	192.0	2.1	1.000249
5000.0	847.9	17.7	-4.8	21.1	1013.4	665.1	242.8	4.7	1.000245
5500.0	832.6	16.6	-5.5	21.4	999.0	663.8	254.1	8.3	1.000241
6000.0	817.6	15.5	-6.2	21.8	984.8	662.5	258.5	11.9	1.000237
6500.0	802.8	14.4	-6.9	22.2	970.9	661.2	262.6	14.5	1.000233
7000.0	788.4	13.3	-7.6	22.6	957.1	659.9	265.8	16.9	1.000229
7500.0	774.1	12.2	-8.3	22.9	943.5	658.6	262.6	17.8	1.000225
8000.0	760.2	11.1	-9.0	23.3	930.2	657.3	258.3	18.5	1.000222
8500.0	746.5	10.0	-9.8	23.7	917.0	656.0	249.6	18.7	1.000218
9000.0	733.0	8.9	-10.5	24.1	904.1	654.7	241.2	18.9	1.000214
9500.0	719.8	7.8	-11.3	24.4	891.3	653.4	232.5	18.8	1.000211
10000.0	706.8	6.7	-12.0	24.8	878.8	652.1	227.1	18.7	1.000208
10500.0	693.9	5.5	-13.4	24.1	866.4	650.7	224.4	18.2	1.000204
11000.0	681.1	4.3	-15.4	22.1	854.3	649.3	227.6	17.6	1.000199
11500.0	668.5	3.1	-17.6	20.1	842.3	647.8	233.8	17.1	1.000196
12000.0	655.9	1.7	-16.3	24.7	830.4	646.2	241.1	19.0	1.000194
12500.0	643.5	.4	-15.3	29.7	818.6	644.7	246.6	21.5	1.000192
13000.0	631.4	-1.0	-14.6	34.7	807.1	643.1	248.6	24.8	1.000190
13500.0	619.5	-2.3	-14.1	39.7	795.8	641.5	249.7	27.2	1.000188
14000.0	607.8	-3.6	-13.9	44.7	784.7	640.0	249.8	27.8	1.000186
14500.0	596.2	-5.0	-14.0	49.1	773.4	638.4	249.0	28.4	1.000183
15000.0	584.7	-6.3	-14.2	53.3	762.3	636.8	247.6	29.1	1.000181
15500.0	573.4	-7.6	-14.6	57.4	751.4	635.2	246.0	30.2	1.000178
16000.0	562.4	-9.0	-15.0	61.6	740.7	633.6	242.6	31.3	1.000175
16500.0	551.4	-10.2	-16.6	59.5	729.7	632.1	242.3	31.8	1.000174
17000.0	540.6	-11.2	-20.5	46.1	718.4	630.8	242.7	31.8	1.000167
17500.0	530.0	-11.3	-25.9	28.7	708.8	630.5	244.0	31.1	1.000161
18000.0	519.6	-11.0	-30.0	19.0	690.3	630.9	244.3	30.5	1.000157

STATION ALTITUDE 3989.00 FEET MSL
14 APR. 78 0730 HRS MST
ASCENSION NO. 236

UPPER AIR DATA
1040020236
WHITE SANDS
TABLE IX. (CONT)

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES	TEMPERATURE DEWPOINT CENTIGRADE	REL.HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
18500.0	509.4	-12.0	-30.9	19.0	679.4	629.6	244.4	30.0	1.000154
19000.0	499.4	-13.1	-31.7	19.0	668.6	628.4	243.8	31.2	1.000151
19500.0	489.4	-13.9	-32.6	18.8	657.5	627.3	242.9	32.4	1.000149
20000.0	479.6	-14.8	-33.4	18.7	646.6	626.3	239.7	34.1	1.000146
20500.0	470.1	-15.7	-34.2	18.5	635.9	625.2	237.1	35.7	1.000144
21000.0	460.7	-16.6	-35.0	18.3	625.3	624.1	237.0	37.2	1.000141
21500.0	451.5	-17.4	-35.9	18.1	615.0	623.1	237.0	38.7	1.000139
22000.0	442.5	-18.4	-36.7	18.0	604.9	621.9	238.5	39.6	1.000136
22500.0	433.4	-19.8	-38.0	18.0	596.0	620.1	239.9	40.5	1.000134
23000.0	424.6	-21.3	-39.2	18.0	587.2	618.3	239.3	40.8	1.000132
23500.0	415.9	-22.7	-40.4	18.0	578.5	616.5	238.4	41.0	1.000130
24000.0	407.4	-24.2	-41.7	18.0	570.0	614.7	238.7	41.5	1.000128
24500.0	399.1	-25.7	-42.9	18.0	561.6	612.9	239.5	42.0	1.000126
25000.0	390.8	-27.1	-43.9	18.4	553.1	611.1	240.8	42.2	1.000124
25500.0	382.4	-28.6	-45.0	18.7	544.7	609.2	242.4	42.2	1.000122
26000.0	374.4	-30.1	-46.1	19.1	536.5	607.4	242.5	40.9	1.000120
26500.0	366.5	-31.6	-47.2	19.5	528.4	605.6	242.0	39.2	1.000118
27000.0	358.7	-33.0	-48.3	19.8	520.4	603.7	241.9	38.7	1.000116
27500.0	351.0	-34.5	-50.0	18.7**	512.4	601.9	241.9	38.4	1.000115
28000.0	343.3	-35.9	-52.5	16.1**	504.1	600.1	241.8	39.2	1.000113
28500.0	335.8	-37.3	-55.2	13.4**	496.1	598.3	241.8	40.2	1.000111
29000.0	328.4	-38.8	-58.1	10.8**	488.2	596.4	241.7	39.6	1.000109
29500.0	321.2	-40.2	-61.4	8.2**	480.4	594.6	241.7	38.8	1.000107
30000.0	314.2	-41.6	-65.4	5.5**	472.8	592.8	242.6	38.6	1.000105
30500.0	307.3	-43.0	-71.0	2.9**	465.3	591.0	243.6	38.3	1.000104
31000.0	300.6	-44.5	-87.3	.2**	457.9	589.1	247.2	39.0	1.000102
31500.0	293.8	-45.7			449.9	587.6	251.1	40.0	1.000100
32000.0	287.1	-46.8			441.9	586.1	255.3	42.0	1.000098
32500.0	280.6	-48.0			434.1	584.6	259.3	44.5	1.000097
33000.0	274.2	-49.1			426.4	583.1	261.8	47.7	1.000095

** AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

STATION ALTITUDE 3989.00 FEET MSL
14 APR. 78 0730 HRS MST
ASCENSION NO. 236

UPPER AIR DATA
1040020236
WHITE SANDS

TABLE IX. (CONT)

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT CENTIGRADE	REL.HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
33500.0	268.0	-49.8			418.1	582.2	263.6	51.1	1.000093
34000.0	261.8	-50.1			409.0	581.8	265.8	57.3	1.000091
34500.0	255.8	-50.4			400.1	581.4	267.7	64.0	1.000089
35000.0	249.9	-50.7			391.4	581.0	269.2	67.4	1.000087
35500.0	244.2	-51.2			383.3	580.3	270.5	70.7	1.000085
36000.0	238.5	-51.8			375.3	579.7	271.2	71.0	1.000084
36500.0	233.0	-52.4			367.6	579.0	271.9	71.1	1.000082
37000.0	227.5	-53.2			360.4	577.8	272.0	73.5	1.000080
37500.0	222.2	-54.0			353.3	576.7	272.1	76.1	1.000079
38000.0	217.0	-54.9			346.4	575.5	272.9	76.7	1.000077
38500.0	211.9	-55.7			339.6	574.4	273.9	76.9	1.000076
39000.0	206.9	-56.6			332.9	573.3	274.1	76.5	1.000074
39500.0	202.1	-57.0			326.7	572.8	274.0	75.8	1.000073
40000.0	197.3	-56.7			317.5	573.2	273.2	74.7	1.000071
40500.0	192.6	-56.1			309.2	573.9	271.9	73.4	1.000069
41000.0	188.1	-55.5			301.1	574.7	271.0	71.8	1.000067
41500.0	183.7	-55.8			294.4	574.3	270.4	70.0	1.000066
42000.0	179.3	-56.0			287.7	574.1	269.7	68.7	1.000064
42500.0	175.1	-55.9			280.7	574.3	269.1	68.2	1.000063
43000.0	171.0	-56.3			274.7	573.6	268.3	67.6	1.000061
43500.0	166.9	-57.2			269.2	572.5	267.0	66.5	1.000060
44000.0	163.0	-57.2			262.9	572.5	265.6	65.4	1.000059
44500.0	159.1	-55.9			255.2	574.2	263.2	64.1	1.000057
45000.0	155.4	-54.3			247.4	576.3	260.9	62.9	1.000055
45500.0	151.8	-54.6			241.9	575.9	258.9	62.6	1.000054
46000.0	148.2	-55.7			237.4	574.5	257.0	62.3	1.000053
46500.0	144.6	-56.7			232.8	573.2	256.5	61.4	1.000052
47000.0	141.2	-57.7			228.3	571.9	256.1	60.6	1.000051
47500.0	137.8	-58.7			223.9	570.6	255.9	58.6	1.000050
48000.0	134.6	-59.6			219.6	569.2	255.8	56.5	1.000049

STATION ALTITUDE 3989.00 FEET MSL
14 APR. 78 0730 HRS MST
ASCENSION NO. 236

UPPER AIR DATA
1040020236
WHITE SANDS
TABLE IX. (CONT)

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT CENTIGRADE	REL.HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
48500.0	131.4	-60.6			215.3	567.9	256.4	54.3	1.000048
49000.0	128.2	-61.5			211.1	566.7	254.7	52.2	1.000047
49500.0	125.1	-61.8			206.3	566.3	253.8	50.2	1.000046
50000.0	122.1	-61.6			201.0	566.7	252.5	48.2	1.000045
50500.0	119.2	-61.1			195.8	567.2	251.2	46.4	1.000044
51000.0	116.3	-61.8			191.6	566.4	249.8	44.8	1.000043
51500.0	113.4	-62.9			188.0	564.9	248.9	43.6	1.000042
52000.0	110.7	-63.9			184.2	563.6	249.2	43.3	1.000041
52500.0	108.0	-64.5			180.3	562.7	249.5	43.0	1.000040
53000.0	105.3	-65.2			176.4	561.8	251.6	42.2	1.000039
53500.0	102.7	-65.9			172.6	560.9	253.8	41.4	1.000038
54000.0	100.2	-66.5			169.0	560.0	256.1	40.1	1.000038
54500.0	97.7	-67.5			165.5	558.7	256.9	37.8	1.000037
55000.0	95.2	-68.5			162.1	557.4	262.0	35.6	1.000036
55500.0	92.9	-69.4			158.8	556.0	262.6	34.5	1.000036
56000.0	90.5	-70.4			155.6	554.7	262.6	33.6	1.000035
56500.0	88.3	-71.4			152.4	553.4	260.9	33.6	1.000034
57000.0	86.1	-71.9			148.9	552.7	257.7	35.2	1.000033
57500.0	83.9	-71.0			144.6	553.9	254.8	36.4	1.000032
58000.0	81.8	-70.1			140.3	555.2	253.2	34.4	1.000031
58500.0	79.8	-69.2			136.2	556.4	251.4	32.4	1.000030
59000.0	77.8	-68.3			132.3	557.6	249.6	27.7	1.000029
59500.0	75.8	-67.4			128.4	558.9	247.0	22.4	1.000029
60000.0	74.0	-66.5			124.7	560.1	243.9	19.6	1.000028
60500.0	72.1	-65.6			121.0	561.3	240.4	18.2	1.000027
61000.0	70.3	-64.7			117.5	562.5	240.3	17.8	1.000026
61500.0	68.6	-64.7			114.6	562.5	242.7	18.1	1.000026
62000.0	66.9	-64.9			111.9	562.1	245.6	18.3	1.000025
62500.0	65.3	-65.2			109.3	561.8	249.1	18.2	1.000024
63000.0	63.6	-65.4			106.7	561.5	251.8	18.0	1.000024

STATION ALTITUDE 3989.00 FEET MSL
14 APR. 78 0730 HRS MST
ASCENSION NO. 236

UPPER AIR DATA
1040020236
WHITE SANDS
TABLE IX. (CONT)

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT CENTIGRADE	REL.HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
63500.0	62.1	-65.7			104.2	561.1	252.2	17.0	1.000023
64000.0	60.6	-65.9			101.8	560.8	252.7	16.0	1.000023
64500.0	59.1	-66.2			99.4	560.5	251.6	14.0	1.000024
65000.0	57.6	-66.4			97.1	560.1	249.9	11.9	1.000024
65500.0	56.2	-66.5			94.7	560.1	247.3	10.0	1.000021
66000.0	54.8	-66.1			92.2	560.6	243.6	8.4	1.000021
66500.0	53.5	-65.6			89.8	561.2	238.6	6.9	1.000020
67000.0	52.2	-65.2			87.4	561.8	233.8	6.0	1.000019
67500.0	50.9	-64.8			85.1	562.3	227.5	5.2	1.000019
68000.0	49.6	-63.9			82.6	563.5	222.4	4.7	1.000018
68500.0	48.4	-62.0			79.9	566.0	216.6	4.2	1.000018
69000.0	47.3	-61.4			77.8	566.9	210.9	3.8	1.000017
69500.0	46.1	-61.0			75.8	567.4	205.7	3.4	1.000017
70000.0	45.1	-60.7			73.9	567.9	199.2	3.1	1.000016
70500.0	44.0	-60.3			72.0	568.4	180.6	2.3	1.000016
71000.0	42.9	-59.9			70.2	568.9	145.9	2.0	1.000016
71500.0	41.9	-59.6			68.4	569.4	113.2	2.6	1.000015
72000.0	40.9	-59.2			66.6	569.9	99.6	4.3	1.000015
72500.0	40.0	-58.8			64.9	570.4	93.9	6.1	1.000014
73000.0	39.0	-58.4			63.3	570.8	93.2	7.9	1.000014
73500.0	38.1	-58.1			61.7	571.3	93.9	9.5	1.000014
74000.0	37.2	-57.7			60.1	571.8	94.4	11.1	1.000013
74500.0	36.3	-57.3			58.6	572.3	96.3	11.0	1.000013
75000.0	35.4	-57.0			57.1	572.8	96.2	10.9	1.000013
75500.0	34.6	-56.6			55.7	573.3	99.7	9.9	1.000012
76000.0	33.8	-56.2			54.2	573.8	113.1	7.1	1.000012
76500.0	33.0	-55.9			52.9	574.3	139.8	5.1	1.000012
77000.0	32.2	-55.5			51.5	574.8	165.4	4.7	1.000011
77500.0	31.4	-55.1			50.2	575.3	181.2	5.1	1.000011
78000.0	30.7	-54.7			48.9	575.7	194.3	5.7	1.000011

STATION ALTITUDE 3989.00 FEET MSL
14 APR. 78 0730 HRS MST
ASCENSION NO. 236

UPPER AIR DATA
1040020236
WHITE SANDS
TABLE IX. (CONT)

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT CENTIGRADE	REL.HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
78500.0	30.0	-54.4			47.7	576.2	186.1	5.4	1.000011
79000.0	29.3	-54.1			46.5	576.6	173.0	5.1	1.000010
79500.0	28.6	-53.9			45.4	576.9	160.2	5.1	1.000010
80000.0	27.9	-53.6			44.3	577.2	161.0	5.1	1.000010
80500.0	27.3	-53.3			43.2	577.6	161.9	5.1	1.000010
81000.0	26.7	-53.1			42.2	577.9	162.9	5.2	1.000009
81500.0	26.0	-52.8			41.2	578.3	164.3	5.7	1.000009
82000.0	25.4	-52.6			40.2	578.6	165.6	6.1	1.000009
82500.0	24.9	-52.3			39.2	578.9	166.7	6.0	1.000009
83000.0	24.3	-52.1			38.3	579.3	175.6	5.3	1.000009
83500.0	23.7	-51.8			37.3	579.6	184.6	4.6	1.000008
84000.0	23.2	-51.5			36.4	580.0	199.1	3.9	1.000008
84500.0	22.6	-51.3			35.5	580.3	220.8	3.5	1.000008
85000.0	22.1	-51.0			34.7	580.6	244.3	3.6	1.000008
85500.0	21.6	-50.8			33.8	581.0	260.3	5.0	1.000008
86000.0	21.1	-50.5			33.0	581.3	246.2	7.0	1.000007
86500.0	20.6	-50.2			32.2	581.7	243.9	9.0	1.000007
87000.0	20.1	-50.0			31.4	582.0	243.6	11.1	1.000007
87500.0	19.7	-49.6			30.7	582.4	245.3	13.3	1.000007
88000.0	19.2	-49.3			29.9	582.9	246.6	15.4	1.000007
88500.0	18.8	-48.9			29.2	583.4	247.6	17.2	1.000006
89000.0	18.4	-48.5			28.5	583.9	249.4	16.3	1.000006
89500.0	18.0	-48.1			27.8	584.4	251.5	15.3	1.000006
90000.0	17.6	-47.7			27.1	584.9	253.8	14.4	1.000006
90500.0	17.2	-47.4			26.5	585.4	256.4	14.2	1.000006
91000.0	16.8	-47.0			25.8	585.9	259.0	14.1	1.000006
91500.0	16.4	-46.6			25.2	586.4	261.7	14.0	1.000006
92000.0	16.0	-46.2			24.6	586.9	265.3	14.6	1.000005
92500.0	15.7	-45.8			24.0	587.4	268.9	15.6	1.000005
93000.0	15.3	-45.5			23.4	587.8	272.1	16.7	1.000005

STATION ALTITUDE 3989.00 FEET MSL
14 APR. 78 0730 HRS MST
ASCENSION NO. 236

UPPER AIR DATA
10400236
WHITE SANDS
TABLE IX. (CONT)

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT CENTIGRADE	REL.HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
93500.0	15.0	-45.1			22.9	588.3	274.1	17.3	1.000006
94000.0	14.6	-44.6			22.3	589.0	274.7	17.2	1.000006
94500.0	14.3	-43.9			21.7	589.9	275.4	17.1	1.000006
95000.0	14.0	-43.2			21.2	590.7	275.6	17.2	1.000006
95500.0	13.7	-42.6			20.7	591.6	272.4	18.5	1.000006
96000.0	13.4	-41.9			20.2	592.5	269.7	19.9	1.000004
96500.0	13.1	-41.2			19.7	593.3	267.3	21.4	1.000004
97000.0	12.8	-40.5			19.2	594.2	266.3	24.8	1.000004
97500.0	12.5	-39.9			18.7	595.0	265.8	28.8	1.000004
98000.0	12.2	-39.2			18.2	595.9	265.4	32.8	1.000004
98500.0	12.0	-38.6			17.8	596.7	266.3	34.8	1.000004
99000.0	11.7	-38.4			17.4	596.9	268.6	34.5	1.000004
99500.0	11.5	-38.2			17.0	597.2	271.0	34.3	1.000004
100000.0	11.2	-38.0			16.6	597.4	273.4	34.0	1.000004
100500.0	11.0	-37.8			16.2	597.7	275.9	32.3	1.000004
101000.0	10.7	-37.6			15.9	598.0	278.6	30.5	1.000004
101500.0	10.5	-37.4			15.5	598.2	281.6	28.9	1.000003
102000.0	10.3	-37.2			15.2	598.5	283.2	30.0	1.000003
102500.0	10.1	-36.9			14.8	598.7	283.9	32.3	1.000003
103000.0	9.8	-36.8			14.5	599.0	284.5	34.5	1.000003
103500.0	9.6	-36.6			14.2	599.2			1.000003
104000.0	9.4	-36.4			13.9	599.4			1.000003
104500.0	9.2	-36.3			13.6	599.6			1.000003
105000.0	9.0	-36.1			13.3	599.8			1.000003

STATION ALTITUDE 3989.00 FEET MSL
14 APR. 78 0730 HRS MST
ASCENSION NO. 236

MANDATORY LEVELS
1040020236
WHITE SANDS
TABLE X.

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

PRESSURE MILLIBARS	GEOPOTENTIAL FEET	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT CENTIGRADE	REL.HUM. PERCENT	WIND DATA DIRECTION DEGREES(TN)	WIND DATA SPEED KNOTS
850.0	4928.	17.9	-4.7	21.	239.7	4.2
800.0	6616.	14.2	-7.0	24.	203.4	15.0
750.0	8389.	10.3	-9.6	24.	251.5	16.7
700.0	10257.	6.1	-12.4	25.	226.7	18.5
650.0	12230.	1.1	-15.8	27.	244.0	20.1
600.0	14320.	-4.5	-13.9	48.	249.5	26.2
550.0	16544.	-10.4	-16.8	59.	242.3	31.9
500.0	18942.	-13.0	-31.7	19.	243.9	31.1
450.0	21554.	-17.6	-36.0	18.	237.2	38.8
400.0	24404.	-25.5	-42.7	18.	239.4	41.9
350.0	27523.	-34.7	-50.3	18.**	241.9	38.4
300.0	30982.	-44.6			247.4	39.0
250.0	34918.	-60.7			269.1	67.3
200.0	39620.	-57.0			273.9	75.5
175.0	42406.	-55.9			269.1	68.2
150.0	45629.	-55.2			256.1	62.5
125.0	49378.	-61.8			253.6	50.2
100.0	53874.	-66.6			256.2	40.0
80.0	58234.	-69.3			251.8	32.8
70.0	60881.	-64.5			240.5	17.8
60.0	63960.	-66.0			252.5	15.4
50.0	67594.	-64.5			224.2	4.9
40.0	72149.	-58.8			94.8	5.7
30.0	78135.	-54.4			187.9	5.4
25.0	81985.	-52.4			106.5	6.3
20.0	86746.	-49.9			244.1	11.6
15.0	92984.	-45.1			274.0	17.3
10.0	102066.	-36.9			284.0	32.6

** AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.